

APPENDIX A

UNEMPLOYMENT, INVOLUNTARY PART-TIME EMPLOYMENT, AND INVOLUNTARY OUT-OF-FIELD RATES, FOR SELECTED SUBGROUPS WITHIN THE DOCTORAL SCIENCE AND ENGINEERING POPULATION: 1993

The following table presents information on the unemployment, involuntary part-time employment, and involuntary out-of-field rates for all of the independent variables considered in this report, plus a limited number of additional variables.

Table A-1. Unemployment, involuntary part-time employment, and involuntary out-of-field rates, for selected subgroups within the doctoral science and engineering population: 1993

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Independent Variables	Unemployment Rate	Involuntary Part-Time Rate	Involuntary Out-of-Field Rate	Total Unemployment, Involuntary Part-time, and Out-of-Field
	by Percent			
All Fields.....	1.6	1.2	3.0	5.9
Natural Sciences and Mathematics.....	1.7	1.0 ^L	3.4 ^H	6.1 ^H
Agricultural sciences.....	1.9	0.1 ^L	3.0	5.0
Biological sciences.....	1.4	0.9 ^L	2.5 ^L	4.8 ^L
Chemistry.....	1.8	0.9 ^L	3.8 ^H	6.5
Geological and environmental sciences.....	2.5 ^H	2.3 ^H	3.7	8.4 ^H
Mathematical and computer sciences.....	1.1 ^L	1.1	2.4	4.6 ^L
Physics and astronomy.....	2.3 ^H	1.1	6.9 ^H	10.3 ^H
Social Sciences.....	1.4	1.8 ^H	2.5 ^L	5.7
Economics.....	1.4	1.0	0.6 ^L	3.1 ^L
Political science.....	2.0	0.8	3.8	6.5
Psychology.....	1.3 ^L	1.9 ^H	1.6 ^L	4.8 ^L
Sociology/Anthropology.....	1.6	2.5 ^H	5.1 ^H	9.2 ^H
Other.....	1.5	2.6 ^H	4.9 ^H	8.9 ^H
Engineering.....	1.7	1.1	2.5 ^L	5.2 ^L
Chemical engineering.....	1.8	0.9	1.3 ^L	4.0 ^L
Civil engineering.....	0.6 ^L	0.5 ^L	0.4 ^L	1.5 ^L
Electrical engineering.....	1.9	1.1	3.1	6.1
Mechanical engineering.....	1.0	1.8	3.1	5.9
Other.....	2.1	0.9	2.8	5.9

See explanatory information, if any, and SOURCE at the end of table.

Table A-1. Unemployment, involuntary part-time employment, and involuntary out-of-field rates, for selected subgroups within the doctoral science and engineering population: 1993

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Independent Variables	Unemployment Rate	Involuntary Part-Time Rate	Involuntary Out-of-Field Rate	Total Unemployment, Involuntary Part-time, and Out-of-Field
				by Percent
Place of employment or residence				
Connecticut.....	1.2	1.5	2.5	5.2
Massachusetts.....	1.4	1.1	2.6	5.1
Other New England Region.....	1.5	0.6	2.8	4.9
New York.....	1.2 ^L	1.7 ^H	3.2	6.2
New Jersey.....	1.3	1.6	3.9	6.8
Pennsylvania.....	1.6	1.0	2.5	5.1
Ohio.....	2.2	0.7 ^L	2.9	5.7
Indiana.....	1.0	0.6 ^L	1.8 ^L	3.3 ^L
Illinois.....	1.2	1.2	2.7	5.0
Michigan.....	1.3	1.2	2.6	5.2
Wisconsin.....	0.5 ^L	1.0	3.0	4.5
Minnesota.....	1.8	1.1	3.5	6.4
Missouri.....	0.7 ^L	1.0	2.6	4.3
Other West North Central Region.....	0.3 ^L	0.5 ^L	2.9	3.7 ^L
District of Columbia.....	0.7 ^L	0.5 ^L	3.3	4.5 ^L
Florida.....	2.4	2.0	2.5	6.9
Maryland.....	2.0	0.7 ^L	3.3	5.9
North Carolina.....	1.6	0.7	2.1	4.5 ^L
Virginia.....	0.9 ^L	1.3	3.5	5.6
Other South Atlantic Region.....	0.6 ^L	0.4 ^L	2.2 ^L	3.2 ^L
East South Central Region.....	1.1 ^L	0.5 ^L	1.9 ^L	3.5 ^L
Texas.....	2.0	1.2	4.0 ^H	7.2 ^H
Other West South Central Region.....	1.3	0.8	1.5 ^L	3.6 ^L
Mountain Region.....	2.6 ^H	1.5	2.3 ^L	6.4
California.....	2.8 ^H	2.1 ^H	3.7 ^H	8.6 ^H
Washington.....	1.9	1.2	4.1	7.3
Other Pacific.....	1.1	1.5	4.5	7.0
Other.....	1.1	1.0	2.4	4.5
Years since receipt of Ph.D.				
Less than 1.....	3.0 ^H	4.5 ^H	2.4	9.9 ^H
1-1.9.....	1.7	2.2 ^H	2.1 ^L	6.0
2-2.9.....	1.6	1.4	1.3 ^L	4.3 ^L
3-3.9.....	1.3	1.2	2.0 ^L	4.5 ^L
4-4.9.....	1.7	1.0	1.7 ^L	4.4 ^L
5-14.9.....	1.4 ^L	1.2	2.9	5.5 ^L
15-24.9.....	1.5	1.2	4.2 ^H	6.9 ^H
25+.....	2.2 ^H	0.8 ^L	2.1 ^L	5.1 ^L

See explanatory information, if any, and SOURCE at the end of table.

Table A-1. Unemployment, involuntary part-time employment, and involuntary out-of-field rates, for selected subgroups within the doctoral science and engineering population: 1993

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Independent Variables	Unemployment Rate	Involuntary Part-Time Rate	Involuntary Out-of-Field Rate	Total Unemployment, Involuntary Part-time, and Out-of-Field
	by Percent			
Age when doctorate received				
less than 26.....	1.2	1.0	4.0	6.2
26-27.....	0.8 ^L	0.8 ^L	2.6 ^L	4.2 ^L
28-29.....	1.2 ^L	0.8 ^L	3.2	5.3 ^L
30-31.....	1.4	0.9 ^L	2.9	5.1 ^L
32-33.....	1.8	1.2	3.2	6.2
34-35.....	2.0	1.7 ^H	2.4 ^L	6.2
36-37.....	2.2	2.5 ^H	3.5	8.2 ^H
38-39.....	2.6 ^H	1.8	3.4	7.8 ^H
40+.....	3.7 ^H	2.6 ^H	2.9	9.2 ^H
Part-time experience				
0.....	1.4 ^L	0.3 ^L	3.0	4.7 ^L
1-1.9.....	2.2	4.6 ^H	3.3	10.1 ^H
2-4.9.....	2.1 ^H	3.1 ^H	3.0	8.1 ^H
5-14.9.....	2.4 ^H	3.2 ^H	3.0	8.6 ^H
15+.....	2.0	3.9 ^H	1.6 ^L	7.4
Full-time experience				
Less than 5.....	2.6 ^H	3.1 ^H	2.9	8.5 ^H
5-14.9.....	1.5	1.3	3.3 ^H	6.1
15-24.9.....	1.3 ^L	1.0 ^L	3.4 ^H	5.7
25+.....	1.8	0.6 ^L	2.2 ^L	4.6 ^L
Employed in 1988?				
No.....	4.1 ^H	2.6 ^H	3.8 ^H	10.5 ^H
Yes.....	1.5 ^L	1.2 ^L	2.9 ^L	5.6 ^L
Not employed in 1988 and:				
Post-1988 doctorate.....	1.6	2.1 ^H	2.2 ^L	5.9
Pre-1988 doctorate.....	9.6 ^H	3.9 ^H	7.6 ^H	21.1 ^H
Occupation in 1988				
Total postsecondary teachers.....	0.7 ^L	1.0 ^L	0.8 ^L	2.5 ^L
Postsecondary teachers: math/computer.....	0.6 ^L	0.9	1.5 ^L	2.9 ^L
Postsecondary teachers: life sciences.....	0.5 ^L	0.4 ^L	0.8 ^L	1.7 ^L
Postsecondary teachers: physical sciences.....	0.4 ^L	1.7	0.8 ^L	2.9 ^L
Postsecondary teachers: social sciences.....	1.0 ^L	1.4	0.6 ^L	3.1 ^L
Postsecondary teachers: engineering.....	0.4 ^L	0.5 ^L	0.5 ^L	1.4 ^L
Total scientists and engineers except postsecondary teachers	1.9 ^H	1.3	2.9	6.1
Mathematical and computer scientists.....	2.6 ^H	1.3	9.8 ^H	13.6 ^H
Agricultural scientists.....	1.0	0.1 ^L	2.5	3.6 ^L
Biological scientists.....	1.8	1.1	1.5 ^L	4.5 ^L
Chemists.....	2.9 ^H	0.3 ^L	2.7	5.9

See explanatory information, if any, and SOURCE at the end of table.

Table A-1. Unemployment, involuntary part-time employment, and involuntary out-of-field rates, for selected subgroups within the doctoral science and engineering population: 1993

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Independent Variables	Unemployment Rate	Involuntary Part-Time Rate	Involuntary Out-of-Field Rate	Total Unemployment, Involuntary Part-time, and Out-of-Field
	by Percent			
Occupation in 1988 (continued)				
Geologists and environmental scientists.....	1.9	1.3	3.7	6.9
Physicists.....	2.3	1.1	4.1	7.5 ^H
Other physical sciences.....	5.5	0.0 ^L	2.6	8.1
Psychologists.....	0.6 ^L	2.4 ^H	0.3 ^L	3.3 ^L
Other social scientists.....	1.4	1.3	1.5 ^L	4.1 ^L
Electrical engineers.....	1.8	1.2	6.0 ^H	9.0 ^H
Other engineers.....	2.5 ^H	1.4	3.4	7.3 ^H
Non-scientists and engineers.....	1.3 ^L	0.7 ^L	3.3 ^H	5.3 ^L
Managerial and professional2.....	1.3 ^L	0.7 ^L	3.3	5.3 ^L
Other non-scientists and engineers2.....	2.1	2.0 ^H	9.1 ^H	13.2 ^H
Employment sector in 1988				
Medical school.....	0.6 ^L	0.6 ^L	1.8 ^L	3.1 ^L
University-affiliated research institute.....	1.6	1.4	2.0 ^L	5.0
Other four-year college/university.....	1.1 ^L	1.1	1.1 ^L	3.3 ^L
Other educational employer.....	1.2	1.6	3.3	6.0
Private for profit employer.....	2.6 ^H	1.1	5.5 ^H	9.2 ^H
Self-employed -- incorporated.....	1.2	2.2	5.7 ^H	9.1 ^H
Self-employed -- not incorporated.....	1.0 ^L	3.2 ^H	3.9	8.1 ^H
Private not for profit employer.....	1.4	1.2	2.1 ^L	4.7 ^L
State government.....	0.8 ^L	0.5 ^L	5.8 ^H	7.1
U.S. Government -- civilian position.....	1.0 ^L	0.4 ^L	3.6	5.0
Other government.....	2.1	0.5 ^L	3.1	5.7
Disability status				
Disability related to seeing.....	1.9	1.3	3.5	6.7
Disability related to hearing.....	3.0 ^H	1.4	3.4	7.8 ^H
Disability related to walking.....	3.4	2.0	2.6	8.0
Disability related to lifting.....	3.6 ^H	2.7	4.3	10.6 ^H
Marital status				
Married.....	1.4 ^L	1.1 ^L	2.9 ^L	5.4 ^L
Not married.....	2.4 ^H	1.7 ^H	3.6 ^H	7.7 ^H
Interactions between gender and marital status				
Married men.....	1.3 ^L	0.9 ^L	2.9 ^L	5.1 ^L
Unmarried men.....	2.8 ^H	1.4	4.0 ^H	8.1 ^H
Married women.....	1.9	2.4 ^H	2.8	7.1 ^H
Unmarried women.....	1.6	2.4 ^H	2.8	6.8 ^H

See explanatory information, if any, and SOURCE at the end of table.

Table A-1. Unemployment, involuntary part-time employment, and involuntary out-of-field rates, for selected subgroups within the doctoral science and engineering population: 1993

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Independent Variables	Unemployment Rate	Involuntary Part-Time Rate	Involuntary Out-of-Field Rate	Total Unemployment, Involuntary Part-time, and Out-of-Field
	by Percent			
Interactions between gender and whether children in home.....				
Men with no children in the home.....	2.1 ^H	1.1	3.0	6.2
Men with children in the home.....	1.2 ^L	0.8 ^L	3.1	5.1 ^L
Women with no children in the home.....	1.2 ^L	2.4 ^H	3.0	6.7 ^H
Women with children in the home.....	2.4 ^H	2.3 ^H	2.6	7.3 ^H
Interactions between gender and race/ethnicity.....				
Non-Hispanic white men.....	1.6	0.9 ^L	3.0	5.4 ^L
Non-Hispanic black men.....	1.2	1.5	1.6 ^L	4.3 ^L
Hispanic men.....	2.0	2.0	2.5	6.5
Asian men.....	1.7	1.1	4.0 ^H	6.7 ^H
Non-Hispanic white women.....	1.6	2.4 ^H	2.8	6.9 ^H
Non-Hispanic black women.....	1.6	1.2	1.5 ^L	4.3
Hispanic women.....	1.6	1.9	0.2 ^L	3.8 ^L
Asian women.....	3.1 ^H	2.5 ^H	4.3 ^H	10.0 ^H
Interactions between marital status and race/ethnicity.....				
Married non-Hispanic whites.....	1.4 ^L	1.1 ^L	2.7 ^L	5.2 ^L
Unmarried non-Hispanic whites.....	2.4 ^H	1.7 ^H	3.6 ^H	7.7 ^H
Married non-Hispanic blacks.....	0.9 ^L	1.0	1.7 ^L	3.7 ^L
Unmarried non-Hispanic blacks.....	2.1	2.1	1.4 ^L	5.6
Married Asians.....	1.9	1.3	3.9 ^H	7.1 ^H
Unmarried Asians.....	1.7	1.6	4.7 ^H	8.1 ^H
Married Hispanics.....	1.8	2.3 ^H	1.9 ^L	6.0
Unmarried Hispanics.....	2.3	0.8	2.3	5.4
Age.....				
under 30.....	1.6	0.3 ^L	1.7 ^L	3.6 ^L
30-34.....	1.0 ^L	1.0	1.5 ^L	3.5 ^L
35-44.....	1.3 ^L	1.2	2.6 ^L	5.2 ^L
45-54.....	1.6	1.4	4.1 ^H	7.0 ^H
55-64.....	2.2 ^H	1.3	2.7	6.2
65+.....	4.2 ^H	1.0	2.0 ^L	7.3 ^H
Interactions between birth place and race/ethnicity.....				
U.S. non-Hispanic white.....	1.5 ^L	1.2 ^L	2.9	5.6 ^L
U.S. non-Hispanic black.....	1.2	0.9	1.5 ^L	3.6
U.S. Asian.....	1.8	1.2	3.1	6.2
U.S. Hispanic.....	2.4	2.2 ^H	1.3 ^L	5.9
Non-U.S. non-Hispanic white.....	2.1	1.7 ^H	2.6	6.5
Non-U.S. non-Hispanic black.....	1.8	2.5	1.7	6.0
Non-U.S. Asian.....	1.9	1.3	4.1 ^H	7.3 ^H
Non-U.S. Hispanic.....	1.2	1.6	2.9	5.7

See explanatory information, if any, and SOURCE at the end of table.

Table A-1. Unemployment, involuntary part-time employment, and involuntary out-of-field rates, for selected subgroups within the doctoral science and engineering population: 1993

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Independent Variables	Unemployment Rate	Involuntary Part-Time Rate	Involuntary Out-of-Field Rate	Total Unemployment, Involuntary Part-time, and Out-of-Field
	by Percent			
Sex				
Men.....	1.6	1.0 ^L	3.0	5.6 ^L
Women.....	1.8	2.4 ^H	2.8	7.0 ^H
Race/ethnicity				
Non-Hispanic white.....	1.6	1.2	2.9 ^L	5.7 ^L
Non-Hispanic black.....	1.4	1.4	1.6 ^L	4.3 ^L
Asian.....	1.9	1.3	4.0 ^H	7.2 ^H
Native American.....	3.1	0.4	2.7	6.3
Hispanic.....	1.9	2.0 ^H	2.0 ^L	5.8
Interactions between gender and spouse's work status				
Male with full-time working spouse.....	1.4 ^L	1.2 ^L	3.3 ^H	5.8 ^L
Male with part-time working spouse.....	1.0 ^L	0.8 ^L	3.0 ^L	4.7 ^L
Male with spouse not working.....	1.5 ^L	0.5 ^L	2.3 ^L	4.3 ^L
Female with full-time working spouse.....	2.0 ^H	2.3 ^H	2.9 ^L	7.2 ^H
Female with part-time working spouse.....	0.5 ^L	3.1 ^H	2.8 ^L	6.5 ^H
Female with spouse not working.....	1.4 ^L	2.6 ^H	3.9 ^H	7.9 ^H
Parents' education				
Less than high school.....	1.5 ^L	1.5 ^H	3.1 ^H	6.1 ^H
High school.....	2.1 ^H	0.9 ^L	3.1 ^H	6.1 ^H
Some college.....	1.3 ^L	1.2 ^L	3.4 ^H	5.9 ^H
2-year college.....	1.4 ^L	1.5 ^H	2.4 ^L	5.3 ^L
4-year college.....	1.3 ^L	1.2 ^L	2.8 ^L	5.4 ^L
Some graduate school.....	1.2 ^L	1.6 ^H	2.8 ^L	5.6 ^L
Master's.....	1.6 ^L	1.4 ^H	3.1 ^H	6.2 ^H
Doctorate.....	1.6 ^H	1.2 ^L	2.8 ^L	5.7 ^L

^HSignificantly higher than average (.05 level)

^LSignificantly lower than average (.05 level)

²See the Technical Notes for an explanation of occupations included in this category.

SOURCE: National Science Foundation/SRS, 1993 Survey of Doctorate Recipients.